



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

MBA PROFESSIONAL REPORT

**Restructuring the Military Retirement System for
Cost Savings and Increased Officer Satisfaction**

**By: William R. Lance
June 2006**

**Advisors: Aruna Apte and
Nayantara Hensel**

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**RESTRUCTURING THE MILITARY RETIREMENT SYSTEM FOR COST
SAVINGS AND INCREASED OFFICER SATISFACTION**

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Submitted in partial fulfillment of the requirements for the degree of

MASTER OF BUSINESS ADMINISTRATION

from the

**NAVAL POSTGRADUATE SCHOOL
June 2006**

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ABSTRACT

The purpose of this MBA Project was to investigate the current military retirement system and provide insight into its effect on active duty officer job satisfaction levels. The goal of this project was to identify and document both the current military retirement system and a theoretical matched Thrift Savings Plan (TSP) option. The primary tools used to accomplish this goal were theoretical Net Present Value (NPV) analysis of several different retirement options and a survey of military students conducted on the campus of the Naval Postgraduate School to gauge their reaction to a hypothetical military retirement plan that more closely resembles those found in the civilian sector.

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I. INTRODUCTION

The research question underlying this Professional Report is “Can the Department of Defense save funds and at the same time increase active duty officer job satisfaction levels by offering matching Thrift Savings Plan (TSP) contributions?” In order to answer this question and gain insight in this situation, a two-fold course of study has been pursued. First, a model was created to look at the Net Present Value (NPV) of several hypothetical retirement scenarios to gain an understanding of what a typical retirement package costs the government. Second, a survey was conducted of active duty officers attending the Naval Postgraduate School, to gain a better understanding of their thoughts and perceptions on the military retirement system and the value of the TSP.

In February 2006, the Defense Advisory Committee on Military Compensation (DACMC) released their preliminary findings/recommendations after a thorough examination of the current military compensation system¹. These results, as they pertain to military retirement, are presented in Appendix A. In summary, they recommend that the military retirement system be revamped to more closely match that being offered in the private sector. This would involve offering matching TSP contributions, and allowing the service member to vest into retirement earlier than the current policy. As it stands today, service members receive no retirement if they leave the service before year twenty. This is known as “cliff-vesting.”

If the majority of DACMC recommendations were enacted, they would represent the largest change to the military retirement system since the end of World War II². However, similar changes are happening throughout the private sector as employers move away from huge pension liabilities toward more 401k centered retirement packages. In December 2005, Verizon Communications announced the restructuring of management retirement benefits. This restructuring included dissolving the defined benefit plan for new hires and increasing matching contributions for its Management

¹ Defense Advisory Committee on Military Compensation link on Defense Link Website; www.defenselink.mil/prhome/dacmc.html; April 2006

Savings Plan (401k). This move allows the company to save over 3 billion pre-tax dollars over the next 10 years and gives Verizon employees greater control, flexibility and portability of their retirement savings³.

An active duty career in the military is not your typical “9 to 5 desk job.” Therefore, would those officers serving enjoy the same control, flexibility and portability offered in private sector retirement plans? Or is the current defined benefit plan needed to provide the stability and reward necessary to maintain an all volunteer force? This Professional Report aims to shed some light on this topic.

Methodology:

The research question is “Can the Department of Defense save funds and at the same time increase active duty officer job satisfaction levels by offering matching Thrift Savings Plan (TSP) contributions?” To answer this question it requires two main pieces of information. First, we need to know how much each of the retirement scenarios would cost the government. Second, we need to know the satisfaction levels of current active duty officers with both the present and proposed retirement systems. Chapter II uses a model to examine government cost of each retirement system. Chapter III presents survey data measuring officer satisfaction of both current and proposed retirement systems.

Scope and Limitations:

This paper examines the active duty officer component of military personnel. The survey does not cover the enlisted component. Naval Postgraduate School students were surveyed, which in itself is a small demographic of the entire active duty officer pool. Since part of the research is to gain insight about the thoughts and perceptions of personnel in the retirement system it would be beneficial to conduct a survey for a larger group that would approximate those thoughts and perceptions throughout the Department of Defense. The stereotypical Naval Postgraduate School student is a bright, motivated

² Gordon Lubold, Navy Times, 13 March 2006

³ PRNewswire Website; www.prnewswire.com/comp/094251.html; April 2006

and career oriented officer. Therefore, survey data should not be used to represent the entire military active duty officer personnel.

Literature Survey:

This paper builds upon a previous Naval Postgraduate School MBA Professional Report entitled, “The Uniformed Services’ Thrift Savings Plan and Military Retirement Compensation Package Options” (Batchelder, 2005). In this report authors Craig D. Batchelder and Edward A. Lombard provide a thorough examination of the Military Retirement System to include the retirement annuity, medical benefits, Thrift Savings Plan, Social Security, Veterans’ Group Life Insurance, and various other benefits such as Exchange and Commissary privileges. Batchelder and Lombard also briefly discuss whether Department of Defense matched TSP contributions would be a fiscally realistic concept. This paper thoroughly examines the qualitative and quantitative considerations of this concept.

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II. RETIREMENT SCENARIOS

A. THE MODEL

In order to understand the restructuring of the retirement system and its effects on both the service member and the government in terms of real dollars, we must first develop a model to base our investigation. Like most models, we first need to make a series of assumptions about the future. For this model, the assumptions are as follows:

Career Progression:

While no two officers have the exact same career progression, we need to assume this is true in order to compare models. Our assumptions are that an officer was commissioned as an 0-1 at age 22. This officer was promoted to paygrade 0-2 at the beginning of Year of Commissioned Service (YCS) 3; 0-3 at YCS 5; 0-4 at YCS 12; 0-5 at YCS 17; and 0-6 at YCS 25. Changing these parametrical values is feasible. However, we would change one of the set of values under our assumptions.

Growth in Annual Base Pay and the Use of Real Dollars:

The DoD Office of the Actuary estimates that the annual base pay increases at 3.75% with annual inflation of 3%. This model makes the assumption that all future annual increases in base pay directly match inflation, and both are assumed to be 3%. While this assumption is very close to the figures that the DoD Office of the Actuary uses, it more importantly allows us to use the 2006 Base Pay Chart as the real dollar value of base pay for any year in the future. Therefore, we assume that because an 0-3 with over 4 YCS earns \$51,570 in base pay in 2006, every 0-3 with over 4 YCS will earn \$51,570 in real dollars for any year into the future even though the nominal dollar value will most likely increase each year.

TSP Contributions and Match:

While the DACMC recommends a TSP match of between 5 and 10% of basic pay, this model assumes a dollar for dollar match of up to 5%. Also we assume only 5% of basic pay is placed into TSP for each and every YCS.

Interest Rates:

The interest rate that one earns on their TSP investments varies from one person to another. A TSP participant can choose any or all of the different investment vehicles that the TSP offers. Table 1 illustrates different funds found within the TSP and their compounded rates of return over the past 10 years.

Table 1. 10 Year Compounded Rates of Return for TSP Funds (source: www.tsp.gov)

Fund	10 Year Compounded Rate of Return (1996-2005)
G Fund: Government Securities Investment Fund	5.49%
F Fund: Fixed Income Index Investment Fund	6.18%
C Fund: Common Stock Index Investment Fund	9.01%
S Fund: Small Capitalization Stock Index Investment Fund	9.74%
I Fund: International Stock Index Investment Fund	5.67%

The DoD Office of the Actuary uses 6.25% annual investment return in their calculations⁴. This is fairly conservative given the figures shown in Table 1. For our model we will use 6% and 10% to represent two possible compounded rates of return for a hypothetical TSP account. Because our model is in real vs. nominal dollars, we will discount and compound cash flows at 3% and 7% respectively to account for 3% inflation.

Compounding Periods:

We assume that the TSP account compounds annually and that all contributions and matched funds made during a given year earn interest for the entire year. In reality, most contributions are made either monthly or bi-monthly throughout the year.

⁴ Peter M. Zouras, DoD Office of the Actuary, September 2004

Annual Retirement Income:

For our model we assume that annual retirement income is a percentage of the final annual base pay before retirement. This percentage begins at 50% of base pay at 20 years and grows at 2.5% for each year thereafter. After 30 years, retirement income is 75% of base pay and does not increase for the years served after 30. The current retirement system is known as “High-3” because it calculates retirement pay based on an average of the highest 36 months of base pay earned during a service members career. For simplicity we will use the final annual base pay.

Years Spent in Retirement:

Assuming an Age of Death of seventy seven⁵, the number of years spent in retirement is simply:

$$(77) - (\text{Age at Retirement})$$

Net Present Value (NPV) of the Retirement Annuity:

To determine the NPV of the retirement annuity we will use the equation⁶:

$$PV = (PMT)(PVIFA_{i,n})$$

where:

PV = Present Value

PMT = Annual Annuity Payment in Real Dollars

$PVIFA_{i,n}$ = Present Value Interest Factor for an Annuity (discounted at i interest for n periods)

To begin, we first need to calculate the PVIFA for each of our retirement scenarios using the equation:

$$PVIFA_{i,n} = \{1 - [1/(1+i)^n]\}/i$$

These factors are listed in Table 2:

⁵ Social Security Agency Website; www.ssa.gov; April 2006

⁶ Arthur J. Keown et al, “Financial Management: Principles and Applications” 2005

Table 2. PVIFA Discounted at 3% and 7% Interest Rates

n = Years in Retirement	PVIFA at i = 3%	PVIFA at i = 7%
35	21.4872	12.9477
34	21.1318	12.8540
33	20.7658	12.7538
32	20.3888	12.6466
31	20.0001	12.5318
30	19.6004	12.4090
29	19.1885	12.2777
28	18.7641	12.1371
27	18.3270	11.9867
26	17.8768	11.8258
25	17.4131	11.6536

B. SCENARIO ANALYSIS

Table 3. 20 Year Retirement Calculations in Real Dollars

Year of Service	Rank	Annual Base Pay (\$)	5% of Base Pay (\$)	Matching Contribution (\$)	Total Annual Contribution (\$)	Total TSP Value at 3% Compounded Growth (\$)	Total TSP Value at 7% Compounded Growth (\$)
1	0-1	28,994	1450	1450	2900	2987	3103
2	0-1	30,175	1509	1509	3018	6185	6549
3	0-2	43,812	2191	2191	4382	10884	11697
4	0-2	45,292	2265	2265	4530	15877	17363
5	0-3	51,570	2579	2579	5158	21666	24097
6	0-3	54,036	2702	2702	5404	27882	31566
7	0-3	54,036	2702	2702	5404	34284	39558
8	0-3	56,747	2837	2837	5674	41157	48398
9	0-3	56,747	2837	2837	5674	48236	57857
10	0-3	58,504	2925	2925	5850	55709	68167
11	0-3	58,504	2925	2925	5850	63405	79198
12	0-4	69,070	3454	3454	6908	72422	92133
13	0-4	69,070	3454	3454	6908	81711	105974
14	0-4	71,345	3567	3567	7134	91510	121026
15	0-4	71,345	3567	3567	7134	101603	137131
16	0-4	72,652	3633	3633	7266	112135	154505
17	0-5	79,567	3978	3978	7956	123694	173833
18	0-5	81,817	4091	4091	8182	135832	194756
19	0-5	81,817	4091	4091	8182	148335	217144
20	0-5	84,046	4202	4202	8404	161441	241336

Using data from Table 3 and the assumptions of this model we can determine the following:

Rank at Retirement: 0-5

Age at Retirement: 42

Years Spent in Retirement: 35

Using Table 3 and the Percentage of Base Pay Earned During Retirement, we can calculate Annual Retirement Income (Real Dollars): $(\$84,046)(.5) = \$42,023$ ----- (1)

We first compute the value of the TSP as a percentage of the Annuity Net Present Value when the interest rate is 6% (3% real).

Using (1) and values from Table 2 we get the Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$42,023 (21.4872) = \$902,957 \text{ ----- (2)}$$

From Table 3 we get the Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$161,441

Hence, using the results in (2) we can calculate TSP Value as a percentage of Annuity Value when $i = 3\%$ (real):

$$= \$161,441 / \$902,957 = 17.88\%$$

Next, we will compute the value of the TSP as a percentage of the Annuity Net Present Value when the interest rate is 10% (7% real).

Using (1) and values from Table 2 we get the Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$42,023 (12.9477) = \$544,101 \text{ ----- (3)}$$

From Table 3 we get the Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$241,336

Hence, using the results in (3) we can calculate TSP Value as a percentage of Annuity Value when $i = 7\%$ (real):

$$= \$241,336 / \$544,101 = 44.36\%$$

Similar calculations were made for each retirement scenario from 21-30 YCS. This data can be found in Appendix B. Table 4 lists the results of each of these analyses when the interest rate is 6% (3% real) and Table 5 list the results when the interest rate is 10% (7% real).

Table 4. Retirement Scenario Analysis Results When the Interest Rate is 6% (3% Real)

YCS at Retirement	Retirement Annuity Net Present Value Discounted at 3% (Real \$)	Value of TSP Compounded at 3% (Real \$)	TSP Value as a Percentage of Retirement Annuity Value (%)
20	902,957	161,441	17.88
21	932,420	174,940	18.76
22	988,764	189,106	19.13
23	1,014,934	203,697	20.07
24	1,038,885	218,726	21.05
25	1,238,882	235,705	19.03
26	1,323,277	253,704	19.17
27	1,343,791	272,244	20.26
28	1,361,091	291,339	21.40
29	1,375,083	311,008	22.62
30	1,385,595	331,266	23.91

Table 5. Retirement Scenario Analysis Results When the Interest Rate is 10% (7% Real)

YCS at Retirement	Retirement Annuity Net Present Value Discounted at 7% (Real \$)	Value of TSP Compounded at 7% (Real \$)	TSP Value as a Percentage of Retirement Annuity Value (%)
20	544,101	241,336	44.36
21	567,170	267,222	47.11
22	607,272	295,191	48.61
23	629,535	325,119	51.64
24	650,952	357,141	54.86
25	784,336	392,963	50.10
26	846,695	431,823	51.00
27	869,198	473,404	54.46
28	890,216	517,894	58.18
29	896,395	565,500	63.09
30	927,300	616,437	66.48

C. SUMMARY

We can see that in a 6% compounded interest rate scenario, TSP value as a percentage of Retirement Annuity value in real dollars varies from 17.88% to 23.91%. This is shown in Figure 1.

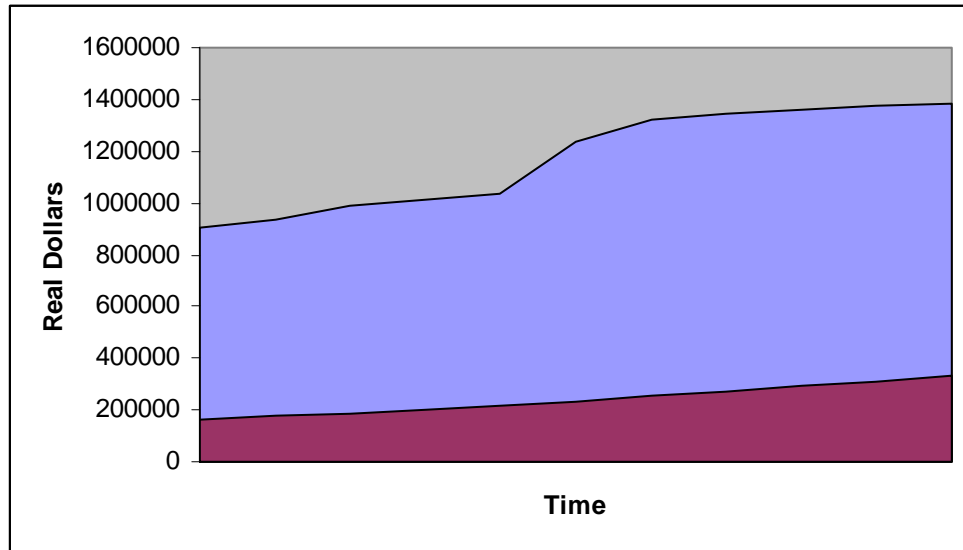


Figure 1. TSP Value Superimposed over Retirement Annuity Value When Interest Rate is 6%

In a 10% compound interest rate scenario, however, TSP value as a percentage of Retirement Annuity value in real dollars varies from 44.36% to 66.48%. This is shown in Figure 2.

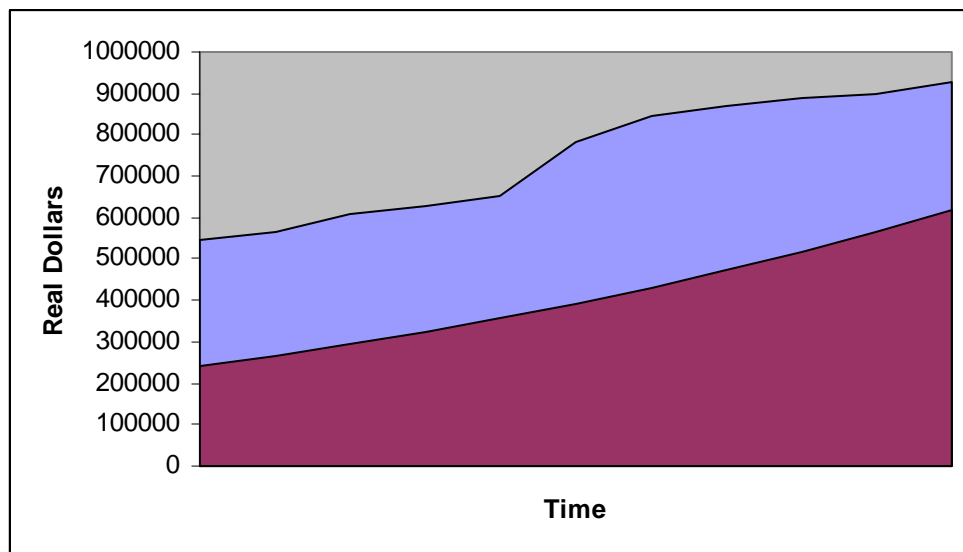


Figure 2. TSP Value Superimposed over Retirement Annuity Value When Interest Rate is 10%

Clearly the higher the interest rate, the more attractive the matching TSP contributions become. If we were to show 10% matched funds vice the 5% used in the model, TSP value would overtake retirement annuity value in real value. Unfortunately, while the stock market has returned approximately 10% over the course of its existence, a service member could never be assured of the interest rate he or she would earn on their TSP throughout their career.

In either of the 5% match scenarios that we looked at, we have shown that the government would save considerably in terms of real dollars if a member would elect a TSP only retirement package and retire anywhere from 20 to 30 YCS. What it fails to show quantitatively is the value inherent in the TSP only retirement package in the “pre-retirement” years. That value to the service member is the fact that they would have transferable retirement savings, after vesting, if they left the service before YCS 20.

In the next chapter, we attempt to get a quantitative measure of the value of the TSP compared to traditional military retirement. Through the use of a survey of 159 officers attending the Naval Postgraduate School, we attempt to answer the question: Can you increase active duty officer job satisfaction and provide cost savings to the government simultaneously by offering TSP matching contributions?

III. ACTIVE DUTY OFFICER THRIFT SAVINGS PLAN MATCHING CONTRIBUTION INTEREST SURVEY

A. INTRODUCTION

The Active Duty Officer Thrift Savings Plan Matching Contribution Interest Survey was administered via Survey Monkey on the Naval Postgraduate School student check-in website. Every U.S. military student at NPS visits this site daily during the work week. Therefore, the entire student body was exposed to this survey for 5 days and the 159 responses equate to approximately 10% of the student body. This purely voluntary survey consisted of 14 questions and was designed to get a “snapshot” look at the NPS student demographics and their thoughts and feelings on matching TSP contributions.

B. QUESTIONS / RESULTS ANALYSIS

1. Question 1

****For active duty U.S. military officers only**** 1. Introduction: You are invited to participate in a survey entitled Active Duty Officer TSP Matching Contribution Interest Survey. 2. Background Information: The Naval Postgraduate School: Graduate School of Business and Public Policy (GSBPP) is conducting this survey. 3. Procedures: The survey consists of 14 questions and takes approximately 5 minutes to complete. Click on the appropriate answer for each survey question type in additional information if required and click NEXT to advance to the next screen. All questions must be answered for the survey to be submitted correctly. 4. Risks and Benefits: I understand that this research involves no risks or discomforts greater than those encountered in the use of a computer. I understand that my participation in this survey will provide data for the researcher to analyze the extent to which active duty military officers would be interested in matching TSP contributions. 5. Compensation: I understand that no tangible reward will be given. A copy of the survey results will be available at the conclusion of the study. 6. Confidentiality and Privacy Act: I understand the records of this study will be kept confidential. No information will be

publicly accessible which could identify me as a participant. Survey responses are identified by a code number on each research form. I understand that records of my participation will be retained permanently at the Naval Postgraduate School. 7. *Voluntary Nature of the Study:* I understand that my participation is strictly voluntary. If I agree to participate I am free to withdraw from the study at any time without prejudice. I may print out a copy of this screen for my records. 8. *Points of Contact:* I understand that if I have any further questions or comments after the completion of the study I may contact the Principal Investigators: LT William Lance USN; wrlance@nps.edu or Dr. Aruna Apte; auapte@nps.edu. *Statement of Consent:* By clicking the YES button below I am acknowledging that I have read and understand this information and agree to voluntarily participate in this survey. I also understand that I may stop at any time by exiting this website.”

Results and Analysis:

YES: 159

NO: 0

2. Question 2

“What is your current paygrade?”

Results and Analysis:

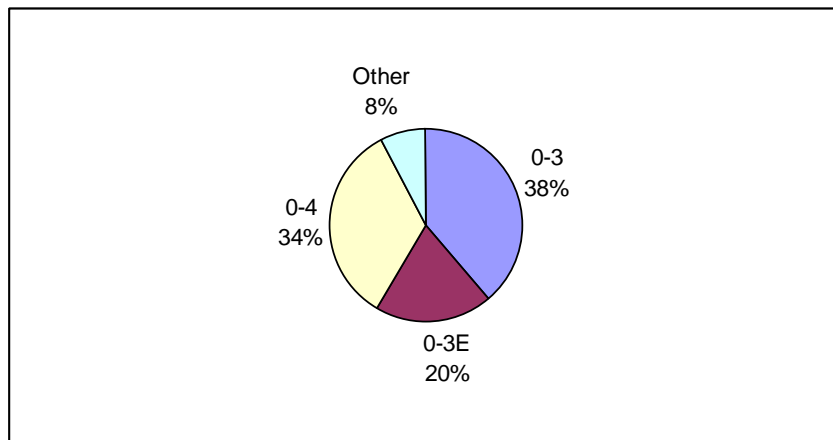


Figure 3. Current Paygrade of Respondent

Considering that the Naval Postgraduate School is designed for mid-career officers, these results as shown in Figure 1 are not surprising. 92% of the respondents were either 0-3, 0-3E, or 0-4. Other ranks included 0-1, 0-2, and 0-5.

3. Question 3

“What is your current branch of service?”

Results and Analysis:

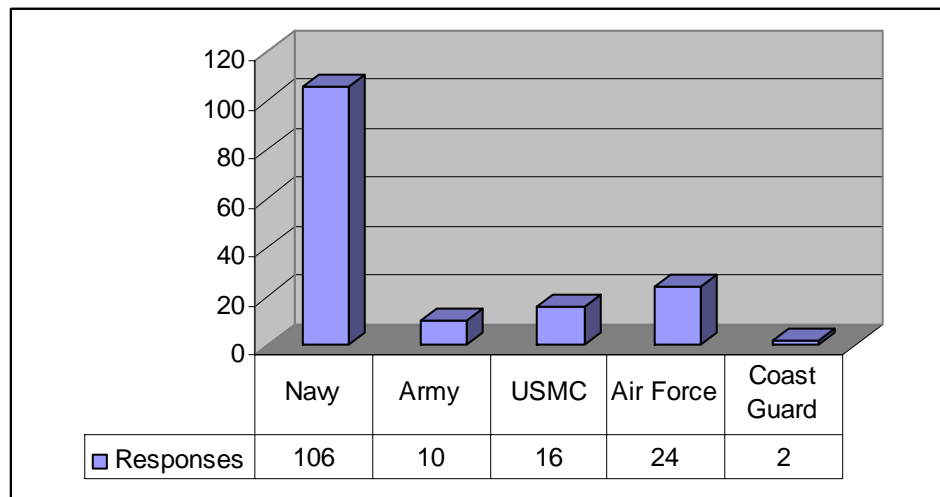


Figure 4. Service Branches of Respondents

Again, the results shown in Figure 2 are not unexpected considering that the Navy represents the largest segment of students at the Naval Postgraduate School.

4. Question 4

“Do you plan on qualifying for military retirement?”

Results and Analysis:

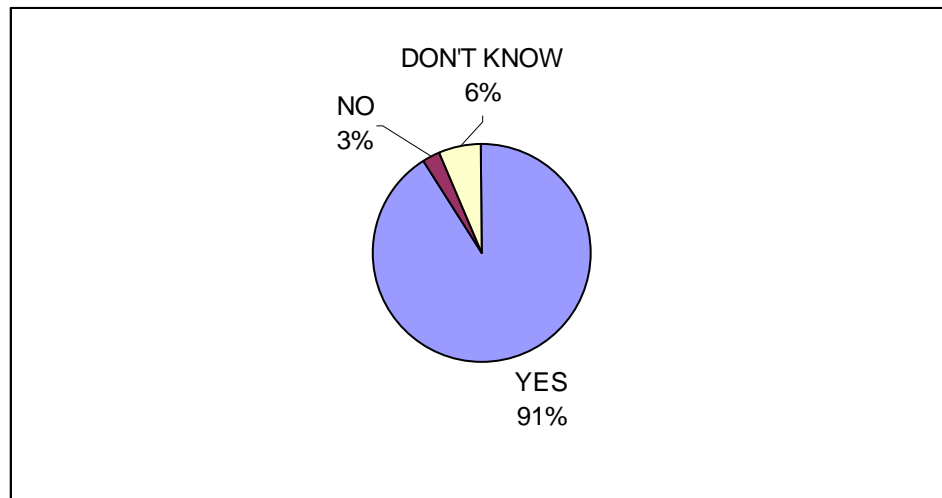


Figure 5. Percentage of Respondents Planning on Qualifying for Military Retirement

This is a fairly high percentage of students who either plan on qualifying for military retirement or are currently undecided. This can be attributed to several factors which include but are not limited to the following:

1. The majority of NPS students arrive after having already served their initial service obligations which is traditionally a major “off-ramp” for leaving the service
2. 54% of the respondents are either 0-4 or 0-3E and most likely have more years in the service than would remain to be served until qualifying for retirement.
3. For most students, attending NPS incurs an additional service obligation that will take the service member past YCS 10 before they would have the opportunity to resign their commissions.

5. Question 5

“How many years in total do you anticipate serving on active duty before leaving/retirement from the service?”

Results and Analysis:

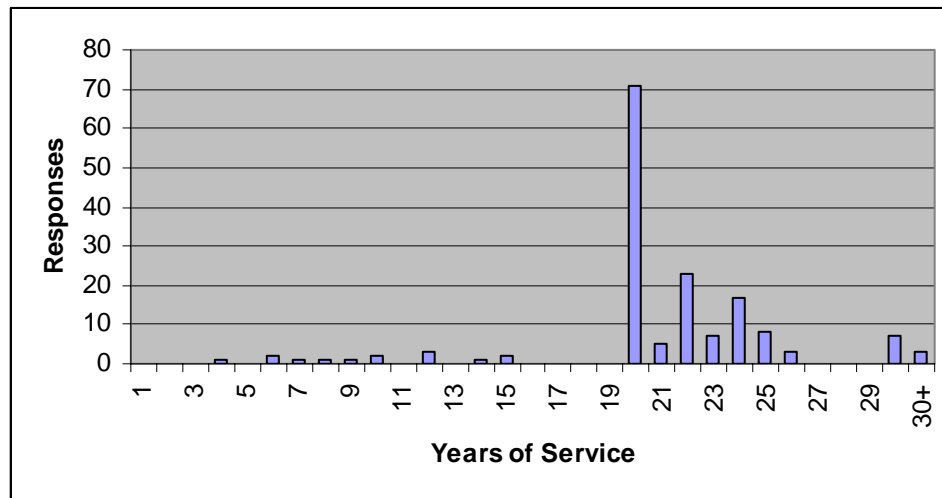


Figure 6. Anticipated Year of Service of Respondents

The responses to this question are extremely interesting. 44.9% of the respondents choose 20 years of service. 82.9% of the respondents choose between 20 and 25 years of service. Only 8.2% of the respondents anticipate serving past 25 years of service. Figure 6 dramatically illustrates the effect of 20 year “cliff-vesting.” As we examined in the previous chapter, the Net Present Values, in real dollars, of the military retirement annuity at 20 YCS was \$902,957 in a 6% interest market and \$544,101 in a 10% interest market. These figures represent a very large “carrot on the end of the stick.” These results beg the question, “How many of the respondents who choose “20 years of service” would retire earlier if given the opportunity and how much greater would their job satisfaction be at the same time?

6. Question 6

“What rank do you anticipate wearing when you leave/retire from the service?”

Results and Analysis:

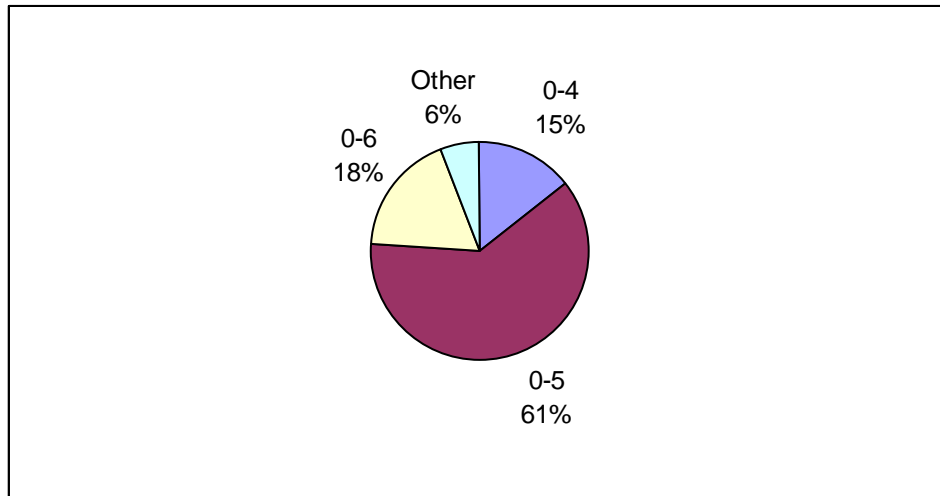


Figure 7. Respondent Anticipated Rank at Departure of Service

This data correlates well with the previous question. The most common rank of officers who retire after 20 years of service is 0-5.

7. Question 7

“Do you currently invest in the Thrift Savings Plan (TSP)?”

Results and Analysis:

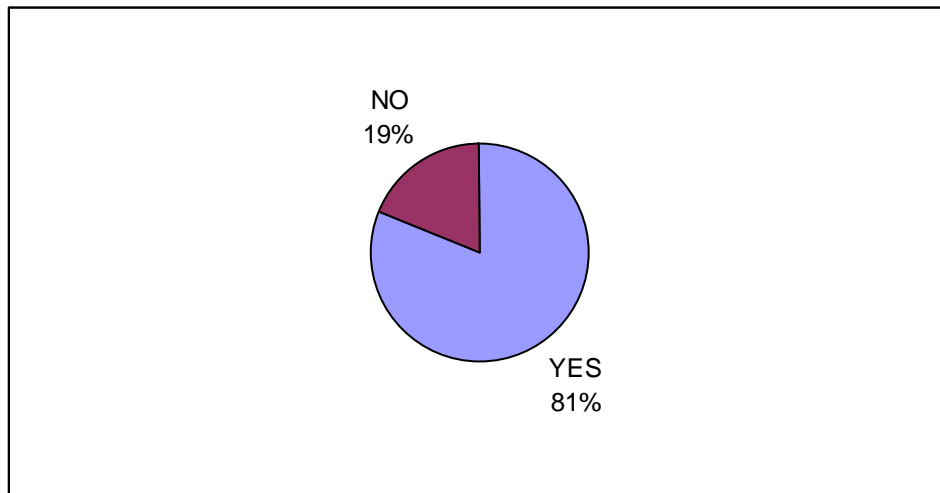


Figure 8. Current TSP Participation of Respondents

This is a fairly large percentage of respondents who said that they currently invest in TSP when the uniformed services as a whole only have a 25% (approx.) participation rate⁷. This could be because the average officer has more disposable income than the average enlisted member. Maybe it is because the average Naval Postgraduate School student is more financially savvy. Regardless, these results should caution any decision maker to look at how restructuring the military retirement system would affect each segment of the military community. While a TSP-centric plan might be very successful in the junior officer community, the same plan could be disastrous in the junior enlisted community. Therefore, a tiered phasing approach may be prudent when introducing any new system.

8. Question 8

“If matching funds were offered would you either start to contribute or increase your current contributions to TSP?”

Results and Analysis:

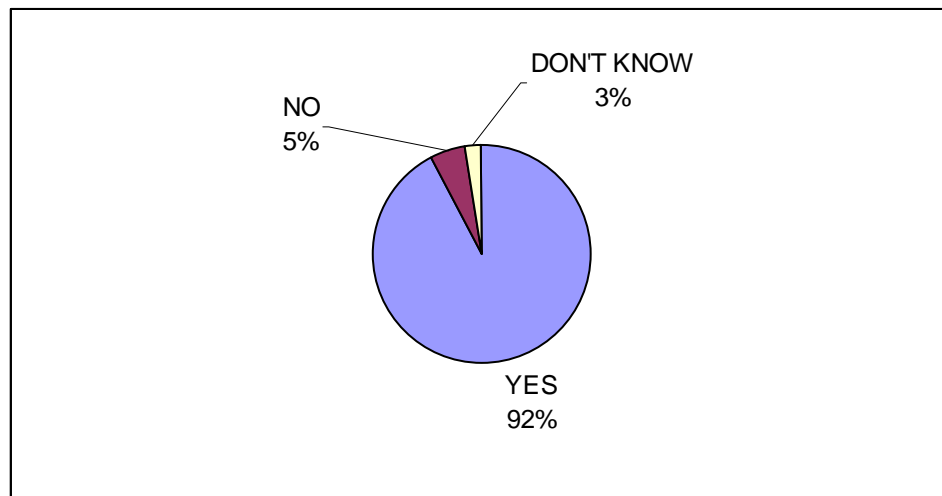


Figure 9. Respondent TSP Participation with the Addition of Matching Contributions

⁷ Craig D. Batchelder and Edward A. Lombard, Naval Postgraduate School MBA Professional Report, p. 55, December 2005

This question requires further analysis because it actually asks two questions:

1. If a match were offered, would you start to contribute to TSP?

and,

2. If you already contribute to TSP would you increase contributions if there was a match?

Looking at the first question, there were 30 respondents who said that they currently do not invest in TSP. Of these, 27 said that they would start to invest if matching funds were offered. The other 3 respondents said that they do not know if they would start to contribute even if matching were offered.

All 8 “No” responses to this question came from people who already contribute to the TSP. Therefore, they either already max out their annual contributions or simply cannot afford to contribute more even if matching funds were offered.

When you put the results of questions 7 and 8 together, 98.1% of the respondents would contribute to TSP if matching contributions were offered with the other 1.9% undecided.

9. Question 9

“If matching TSP funds were offered after how many years would you expect it to take for these funds to become vested? (That is to say if you left the service the matching funds would leave with you)”

Results and Analysis:

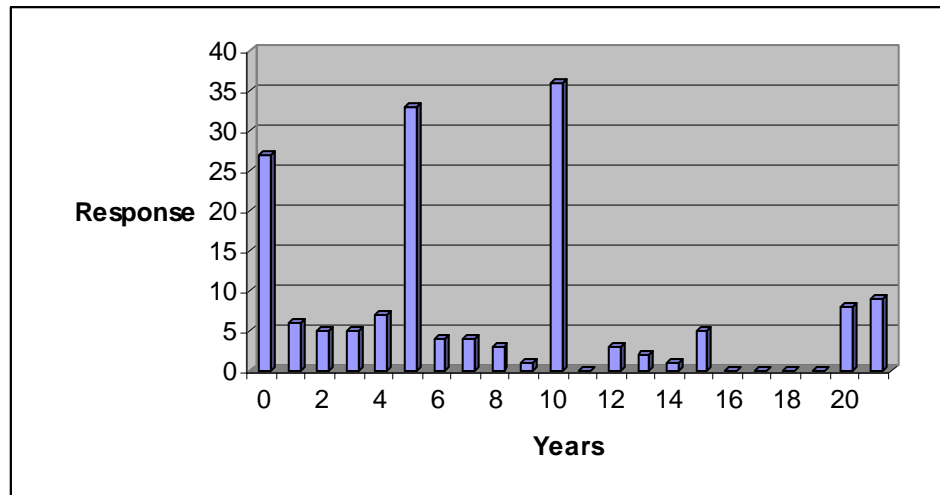


Figure 10. Respondent Expectation of Matched TSP Contribution Vesting

There seems to be four main schools of thought on this question:

1. Immediate Vesting – This would provide the lowest financial risk for the service member and the greatest financial risk for the government.
2. YCS 5 – This approximates the point at which most officers complete their initial service requirement
3. YCS 10 – This received the most responses and represents a balance between career flexibility for the service member and meeting the needs of the service.
4. YCS 20+ - These responses can only be described as purely altruistic. They feel that only if you qualify for the traditional retirement would you then vest your matched TSP funds. This would only serve to *increase* the pressures to leave the service early to begin a new career or remain in the service just long enough to qualify for retirement.

10. Question 10

“Do you plan on retiring under the Military Retirement Reform Act (REDUX)?”

Results and Analysis:

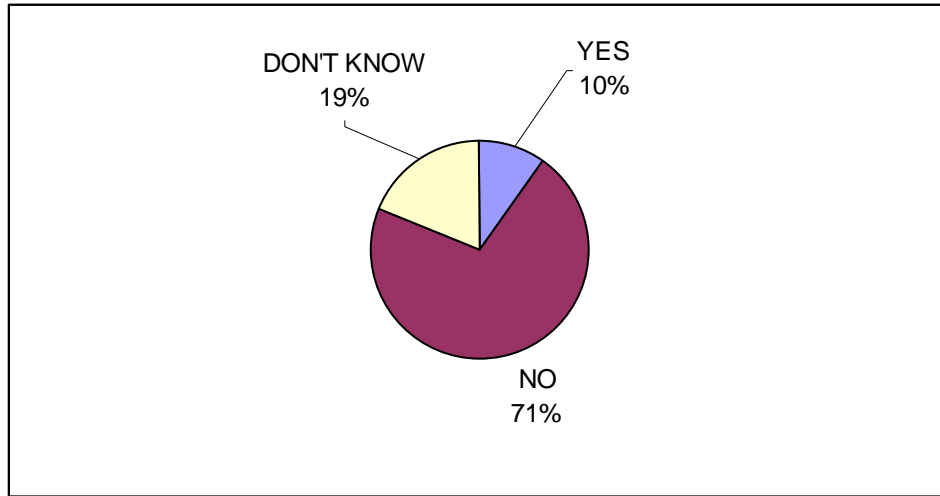


Figure 11. Respondent Participation in REDUX Retirement

Members who choose to retire under REDUX receive a \$30,000 Career Status Bonus upon reaching 15 years of active-duty service. In exchange, they only receive 40% of (High-3) base pay after 20 years of service. This increases at 3.5% for each additional year served until retirement. Therefore, the member would still receive 75% of base pay at 30 years. The \$30,000 Career Status Bonus does not change whether the member is an E-5 or an O-5, therefore, REDUX becomes less and less attractive the more senior a service member gets. It is very surprising to see that almost 30% of the respondents either accepted REDUX or are considering it after the thorough examination we did of the NPV of military pensions. While it is impossible to know the circumstances under which each member made the decision to accept REDUX, but it is fair to say that it is essential that future service members need to consider the financial ramifications of making this difficult decision. Any respondent who chose either “YES” or “DON’T KNOW” were taken to question #14 at the end of the survey.

11. Question 11

“The current military pension system provides 50% of (High-3) base pay after 20 years of service increasing at 2.5% per year to a maximum of 75% of base pay after 30 years of service. Assume a dollar for dollar match were offered for the first 5% of base pay contributed to TSP. Would you be willing to accept a reduced pension benefit in exchange for matched TSP contributions?”

Results and Analysis:

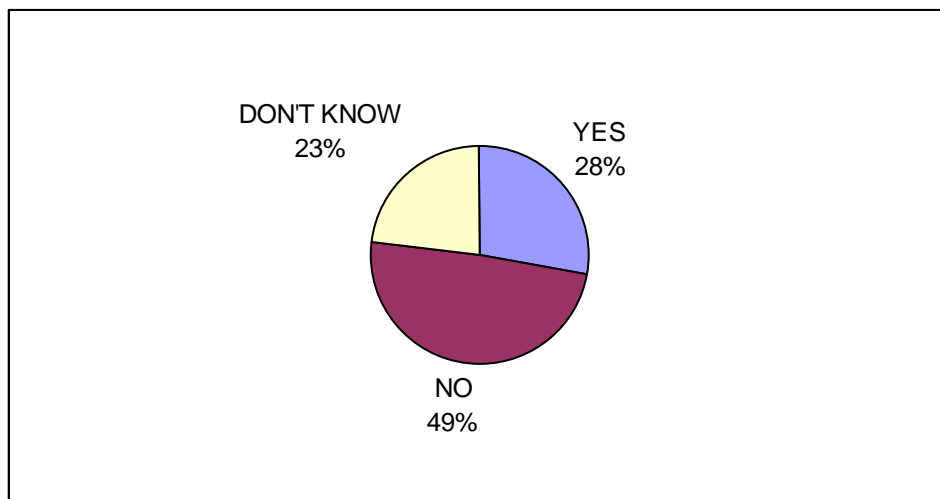


Figure 12. Respondents Willingness to Accept Reduced Pension Benefits in Exchange for Matched TSP Funding

The 5% match was chosen for this question because it represents the lowest recommended match from the DACMC recommendations. We have seen in the previous chapter that there are significant gaps between the current defined benefit plan and the 5% TSP in either a 6% or 10% interest rate market. Still, 40 respondents said that they were willing to accept a reduced pension in exchange for matching TSP funds. All respondents who answered either “NO” or “DON’T KNOW” were taken to question #14 at the end of the survey. Questions #12 and #13 were only answered by the 40 respondents who answered “YES” to this question.

12. Question 12

“In exchange for dollar for dollar matching TSP contributions on the first 5% of base pay what percentage of base pay would you be willing to accept for the defined benefit portion of your retirement after 20 years of service? (Currently this is 50%)”

Results and Analysis:

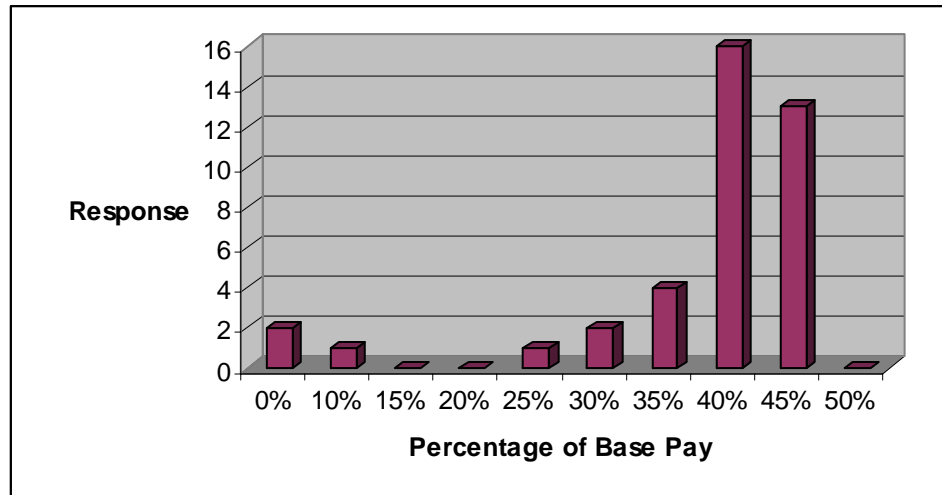


Figure 13. Respondents Estimated Percentage of Base Pay at 20 Year Retirement with Matching TSP Funding

Both the median and mode of this data set is 40% of pay with the mean being 37.45%.

13. Question 13

“Assuming your answer to the previous question were policy what percentage of base pay would this increase for each year of service after 20? (Currently this increase is 2.5% per year)”

Results and Analysis:

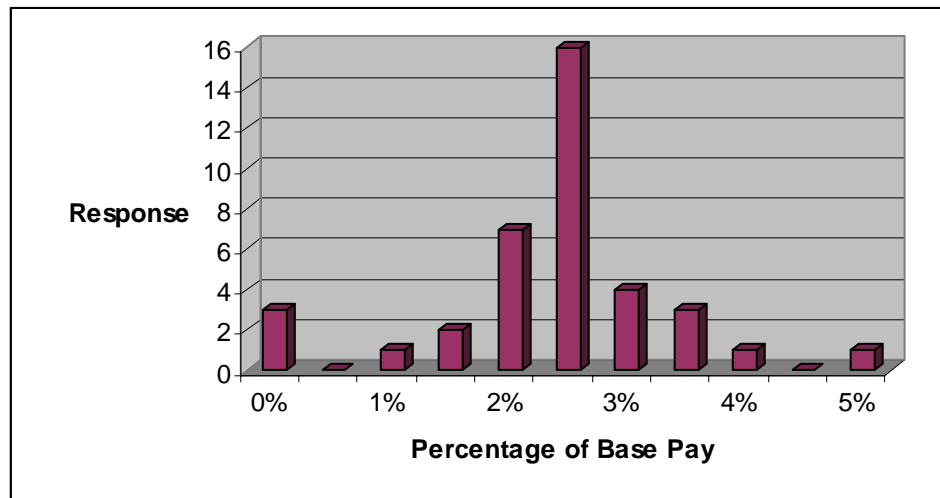


Figure 14. Respondents Estimated Base Pay Increases in Retirement with Matching TSP Funding

Both the median and mode of this data set is 2.5% with the mean being 2.34%.

14. Question 14

“Please provide any additional thoughts/comments on this topic below:”

Results and Analysis:

The results of this open-ended question are presented in Appendix C. They are unedited with the exception of spelling. Comments ranged from very pro-defined benefit to very pro-TSP with many comments falling in between these two extremes.

C. SUMMARY

Although only about 10% of the people exposed to this survey volunteered to take it, 159 responses is statistically significant. 91.1% plan on qualifying for military retirement with 82.9% leaving the service between 20 to 25 years of service. Of that, 61.4% anticipate wearing the rank of 0-5 when they retire. 81.1% of the respondents currently invest in TSP with that percentage swelling to 98.1% once you include

matching TSP funds. Expected vesting for these matched TSP funds varies from one extreme (0 years) to the other (20+) years.

40 respondents said that they were willing to accept a reduction in the defined benefit plan in exchange for matching TSP funding. The average percentage of base pay at a 20 year retirement was 37.45% increasing at an average of 2.34% for each year served past 20. When we revisit the 20 Year Retirement NPV model we used in the previous chapter substituting these values we get the following:

Rank at Retirement: 0-5

Age at Retirement: 42

Years Spent in Retirement: 35

Using Table 3 and the Percentage of Base Pay Earned During Retirement, we can calculate Annual Retirement Income (Real Dollars): $(\$84,046)(.3745) = \$31,475$ ----- (1)

We first compute the value of the TSP as a percentage of the Annuity Net Present Value when the interest rate is 6% (3% real).

Using (1) and values from Table 2 we get the Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$31,475 (21.4872) = \$676,314 \text{ ----- (2)}$$

From Table 3 we get the Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$161,441

Hence, using the results in (2) we can calculate TSP Value as a percentage of Annuity Value when $i = 3\%$ (real):

$$= \$161,441 / \$676,314 = 23.87\%$$

Next, we will compute the value of the TSP as a percentage of the Annuity Net Present Value when the interest rate is 10% (7% real).

Using (1) and values from Table 2 we get the Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$31,475 (12.9477) = \$407,529 \text{ ----- (3)}$$

From Table 3 we get the Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$241,336

Hence, using the results in (3) we can calculate TSP Value as a percentage of Annuity Value when $i = 7\%$ (real):

$$= \$241,336 / \$407,529 = 59.22\%$$

In a 6% interest rate market, this would save the government \$226,643 real dollars and in a 10% interest rate market, this would save the government \$136,572 real dollars. So we have proved that for a quarter (40 out of 159) of the respondents of this survey, it is possible to increase officer job satisfaction and provide cost savings for the government by offering matching TSP contributions and reducing defined pension benefits. Our assumption here is that these 40 individuals would serve at least 20 years. This may not be probable. Additional study would need to be done to see what the mid-career attrition rate would be if matching TSP funding were offered.

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IV. CONCLUSION

As the non-discretionary portion of the defense budget continues to grow, it is clear that a solution is needed to maintain a smart, agile and all-voluntary force. These characteristics are crucial to successfully fight and win the Global War on Terrorism well into the current century. Restructuring the military retirement system is one tool that could be used to accomplish this mission. Increasing military compensation and offering matching TSP contributions would shift budget dollars to the current year versus increasing an unfunded pension liability. This would give policy-makers a clearer picture of the costs needed to maintain our military force.

Based on our results, restructuring the military retirement system could provide substantial cost savings to the government. In a 6% interest rate market with a 5% match, TSP value as a percentage of retirement annuity value varied from 17.88 to 23.91%. In a 10% interest rate market this increased to 44.36 to 66.48%. In both scenarios, however, the government matching contribution would be the same and would be a substantial savings over the current retirement system. However, many officers consider the current 20 year military retirement as “deferred compensation.” Therefore, to increase active duty officer job satisfaction at the same time, total military compensation would need to more closely match what is being offered in the private sector. This would involve not only the establishment of matching TSP contributions, but an increase in the annual salaries as well. This would prevent an officer corps that largely consists of highly educated individuals with outstanding leadership abilities from leaving military service earlier than they would if we maintained the retirement system as it stands today.

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APPENDIX A – DEFENSE ADVISORY COMMITTEE ON MILITARY COMPENSATION: PRELIMINARY FINDINGS/ RECOMMENDATIONS ON THE MILITARY RETIREMENT SYSTEM

- Current system generously rewards on the order of 15% of the enlisted force and 50% of the officer corps that serve 20 or more years and retire

- Lifetime, inflation-protected annuity

- Lifetime medical care for member and dependents

- “Cliff-vesting” retirement at twenty years limits force management options and fails to recognize service of less than 20 years (inflexible and inequitable)

- No incentive to serve beyond 30 years

- Immediate Lifetime retired pay was designed for another era and force

- Services need ways to improve management flexibility within the current [retirement] system, in the near term

- Services should have the authority to “buy-out” members with more than 10 years of service who are not yet vested

- “Buy-outs” would be purely voluntary

- Plan similar to the Voluntary Separation Pay recently proposed by the Navy would be one way to do this

- In the longer term, the military retirement system should be restructured under a vision that increases its overall flexibility and efficiency

- This vision would include:

- Earlier vesting in retirement

- Incentives in some occupations to serve beyond 20 or even 30 year career

- Reassessment of high year tenure policies

-A revised retirement scheme with:

- Government contribution to a thrift savings plan (TSP) or 401K-like plan
 - Percentage of Basic Pay in the range of 5-10%
 - Government contributions to accumulate immediately upon entrance to active duty
 - Vest no later than year of service 10 (but not before year of service 5)
 - May receive vested contributions in cash
- Retirement annuity that begins at 60
 - Computed under a formula similar to the current retirement annuity
 - Annuity would vest at the completion of year of service 10
 - Annuity formula would be extended through 40 years of service
- Additional compensation in one or more of the following forms:
 - “Gate pay” at various years of service
 - Transition pay upon separation
 - Basic pay increases and bonuses
- The retirement health benefit would continue to vest at the completion of 20 years of service

APPENDIX B – RETIREMENT SCENARIO ANALYSIS FOR RETIREMENT AT 21 TO 30 YEARS OF COMMISSIONED SERVICE

21 Year Retirement:

Table 6. 21 Year Retirement Calculations in Real Dollars

Year of Service	Rank	Annual Base Pay (\$)	5% of Base Pay (\$)	Matching Contribution (\$)	Total Annual Contribution (\$)	Total TSP Value at 3% Compounded Growth (\$)	Total TSP Value at 7% Compounded Growth (\$)
1	0-1	28,994	1450	1450	2900	2987	3103
2	0-1	30,175	1509	1509	3018	6185	6549
3	0-2	43,812	2191	2191	4382	10884	11697
4	0-2	45,292	2265	2265	4530	15877	17363
5	0-3	51,570	2579	2579	5158	21666	24097
6	0-3	54,036	2702	2702	5404	27882	31566
7	0-3	54,036	2702	2702	5404	34284	39558
8	0-3	56,747	2837	2837	5674	41157	48398
9	0-3	56,747	2837	2837	5674	48236	57857
10	0-3	58,504	2925	2925	5850	55709	68167
11	0-3	58,504	2925	2925	5850	63405	79198
12	0-4	69,070	3454	3454	6908	72422	92133
13	0-4	69,070	3454	3454	6908	81711	105974
14	0-4	71,345	3567	3567	7134	91510	121026
15	0-4	71,345	3567	3567	7134	101603	137131
16	0-4	72,652	3633	3633	7266	112135	154505
17	0-5	79,567	3978	3978	7956	123694	173833
18	0-5	81,817	4091	4091	8182	135832	194756
19	0-5	81,817	4091	4091	8182	148335	217144
20	0-5	84,046	4202	4202	8404	161441	241336
21	0-5	84,046	4202	4202	8404	174940	267222

Using data from Table 6 and the assumptions of this model presented in Chapter II, we can determine the following:

Rank at Retirement: 0-5

Age at Retirement: 43

Years Spent in Retirement: 34

Annual Retirement Income (Real Dollars): $(\$84,046)(.525) = \$44,124$

Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$44,124 (21.1318) = \$932,420$$

Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$174,940

TSP Value as a percentage of Annuity Value when $i = 3\%$:

$$= 174940 / 932420 = 18.76\%$$

Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$44,124 (12.8540) = \$567,170$$

Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$267,222

TSP Value as a percentage of Annuity Value when $i = 7\%$:

$$= 267222 / 567170 = 47.11\%$$

22 Year Retirement:

Table 7. 22 Year Retirement Calculations in Real Dollars

Year of Service	Rank	Annual Base Pay (\$)	5% of Base Pay (\$)	Matching Contribution (\$)	Total Annual Contribution (\$)	Total TSP Value at 3% Compounded Growth (\$)	Total TSP Value at 7% Compounded Growth (\$)
1	0-1	28,994	1450	1450	2900	2987	3103
2	0-1	30,175	1509	1509	3018	6185	6549
3	0-2	43,812	2191	2191	4382	10884	11697
4	0-2	45,292	2265	2265	4530	15877	17363
5	0-3	51,570	2579	2579	5158	21666	24097
6	0-3	54,036	2702	2702	5404	27882	31566
7	0-3	54,036	2702	2702	5404	34284	39558
8	0-3	56,747	2837	2837	5674	41157	48398
9	0-3	56,747	2837	2837	5674	48236	57857
10	0-3	58,504	2925	2925	5850	55709	68167
11	0-3	58,504	2925	2925	5850	63405	79198
12	0-4	69,070	3454	3454	6908	72422	92133
13	0-4	69,070	3454	3454	6908	81711	105974
14	0-4	71,345	3567	3567	7134	91510	121026
15	0-4	71,345	3567	3567	7134	101603	137131
16	0-4	72,652	3633	3633	7266	112135	154505
17	0-5	79,567	3978	3978	7956	123694	173833
18	0-5	81,817	4091	4091	8182	135832	194756
19	0-5	81,817	4091	4091	8182	148335	217144
20	0-5	84,046	4202	4202	8404	161441	241336
21	0-5	84,046	4202	4202	8404	174940	267222
22	0-5	86,573	4329	4329	8658	189106	295191

Using data from Table 7 and the assumptions of this model presented in Chapter II, we can determine the following:

Rank at Retirement: 0-5

Age at Retirement: 44

Years Spent in Retirement: 3

Annual Retirement Income (Real Dollars): $(\$86,573)(.55) = \$47,615$

Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$47,615 (20.7658) = \$988,764$$

Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$189,106

TSP Value as a percentage of Annuity Value when $i = 3\%$:

$$= 189106 / 988764 = 19.13\%$$

Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$47,615 (12.7538) = \$607,272$$

Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$295,191

TSP Value as a percentage of Annuity Value when $i = 7\%$:

$$= 295191 / 607272 = 48.61\%$$

23 Year Retirement:

Table 8. 23 Year Retirement Calculations in Real Dollars

Year of Service	Rank	Annual Base Pay (\$)	5% of Base Pay (\$)	Matching Contribution (\$)	Total Annual Contribution (\$)	Total TSP Value at 3% Compounded Growth (\$)	Total TSP Value at 7% Compounded Growth (\$)
1	0-1	28,994	1450	1450	2900	2987	3103
2	0-1	30,175	1509	1509	3018	6185	6549
3	0-2	43,812	2191	2191	4382	10884	11697
4	0-2	45,292	2265	2265	4530	15877	17363
5	0-3	51,570	2579	2579	5158	21666	24097
6	0-3	54,036	2702	2702	5404	27882	31566
7	0-3	54,036	2702	2702	5404	34284	39558
8	0-3	56,747	2837	2837	5674	41157	48398
9	0-3	56,747	2837	2837	5674	48236	57857
10	0-3	58,504	2925	2925	5850	55709	68167
11	0-3	58,504	2925	2925	5850	63405	79198
12	0-4	69,070	3454	3454	6908	72422	92133
13	0-4	69,070	3454	3454	6908	81711	105974
14	0-4	71,345	3567	3567	7134	91510	121026
15	0-4	71,345	3567	3567	7134	101603	137131
16	0-4	72,652	3633	3633	7266	112135	154505
17	0-5	79,567	3978	3978	7956	123694	173833
18	0-5	81,817	4091	4091	8182	135832	194756
19	0-5	81,817	4091	4091	8182	148335	217144
20	0-5	84,046	4202	4202	8404	161441	241336
21	0-5	84,046	4202	4202	8404	174940	267222
22	0-5	86,573	4329	4329	8658	189106	295191
23	0-5	86,573	4329	4329	8658	203697	325119

Using data from Table 8 and the assumptions of this model presented in Chapter II, we can determine the following:

Rank at Retirement: 0-5

Age at Retirement: 45

Years Spent in Retirement: 32

Annual Retirement Income (Real Dollars): $(\$86,573)(.575) = \$49,779$

Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$49,779 (20.3888) = \$1,014,934$$

Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$203,697

TSP Value as a percentage of Annuity Value when $i = 3\%$:

$$= 203697 / 1014934 = 20.07\%$$

Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$49,779 (12.6466) = \$629,535$$

Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$325,119

TSP Value as a percentage of Annuity Value when $i = 7\%$:

$$= 325119 / 629535 = 51.64\%$$

24 Year Retirement:

Table 9. 24 Year Retirement Calculations in Real Dollars

Year of Service	Rank	Annual Base Pay (\$)	5% of Base Pay (\$)	Matching Contribution (\$)	Total Annual Contribution (\$)	Total TSP Value at 3% Compounded Growth (\$)	Total TSP Value at 7% Compounded Growth (\$)
1	0-1	28,994	1450	1450	2900	2987	3103
2	0-1	30,175	1509	1509	3018	6185	6549
3	0-2	43,812	2191	2191	4382	10884	11697
4	0-2	45,292	2265	2265	4530	15877	17363
5	0-3	51,570	2579	2579	5158	21666	24097
6	0-3	54,036	2702	2702	5404	27882	31566
7	0-3	54,036	2702	2702	5404	34284	39558
8	0-3	56,747	2837	2837	5674	41157	48398
9	0-3	56,747	2837	2837	5674	48236	57857
10	0-3	58,504	2925	2925	5850	55709	68167
11	0-3	58,504	2925	2925	5850	63405	79198
12	0-4	69,070	3454	3454	6908	72422	92133
13	0-4	69,070	3454	3454	6908	81711	105974
14	0-4	71,345	3567	3567	7134	91510	121026
15	0-4	71,345	3567	3567	7134	101603	137131
16	0-4	72,652	3633	3633	7266	112135	154505
17	0-5	79,567	3978	3978	7956	123694	173833
18	0-5	81,817	4091	4091	8182	135832	194756
19	0-5	81,817	4091	4091	8182	148335	217144
20	0-5	84,046	4202	4202	8404	161441	241336
21	0-5	84,046	4202	4202	8404	174940	267222
22	0-5	86,573	4329	4329	8658	189106	295191
23	0-5	86,573	4329	4329	8658	203697	325119
24	0-5	86,573	4329	4329	8658	218726	357141

Using data from Table 9 and the assumptions of this model presented in Chapter II, we can determine the following:

Rank at Retirement: 0-5

Age at Retirement: 46

Years Spent in Retirement: 31

Annual Retirement Income (Real Dollars): $(\$86,573)(.60) = \$51,944$

Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$51,944 (20.0001) = \$1,038,885$$

Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$218,726

TSP Value as a percentage of Annuity Value when $i = 3\%$:

$$= 218726 / 1038885 = 21.05\%$$

Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$51,944 (12.5318) = \$650,952$$

Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$357,141

TSP Value as a percentage of Annuity Value when $i = 7\%$:

$$= 357141 / 650952 = 54.86\%$$

25 Year Retirement:

Table 10. 25 Year Retirement Calculations in Real Dollars

Year of Service	Rank	Annual Base Pay (\$)	5% of Base Pay (\$)	Matching Contribution (\$)	Total Annual Contribution (\$)	Total TSP Value at 3% Compounded Growth (\$)	Total TSP Value at 7% Compounded Growth (\$)
1	0-1	28,994	1450	1450	2900	2987	3103
2	0-1	30,175	1509	1509	3018	6185	6549
3	0-2	43,812	2191	2191	4382	10884	11697
4	0-2	45,292	2265	2265	4530	15877	17363
5	0-3	51,570	2579	2579	5158	21666	24097
6	0-3	54,036	2702	2702	5404	27882	31566
7	0-3	54,036	2702	2702	5404	34284	39558
8	0-3	56,747	2837	2837	5674	41157	48398
9	0-3	56,747	2837	2837	5674	48236	57857
10	0-3	58,504	2925	2925	5850	55709	68167
11	0-3	58,504	2925	2925	5850	63405	79198
12	0-4	69,070	3454	3454	6908	72422	92133
13	0-4	69,070	3454	3454	6908	81711	105974
14	0-4	71,345	3567	3567	7134	91510	121026
15	0-4	71,345	3567	3567	7134	101603	137131
16	0-4	72,652	3633	3633	7266	112135	154505
17	0-5	79,567	3978	3978	7956	123694	173833
18	0-5	81,817	4091	4091	8182	135832	194756
19	0-5	81,817	4091	4091	8182	148335	217144
20	0-5	84,046	4202	4202	8404	161441	241336
21	0-5	84,046	4202	4202	8404	174940	267222
22	0-5	86,573	4329	4329	8658	189106	295191
23	0-5	86,573	4329	4329	8658	203697	325119
24	0-5	86,573	4329	4329	8658	218726	357141
25	0-6	101,131	5057	5057	10114	235705	392963

Using data from Table 10 and the assumptions of this model presented in Chapter II, we can determine the following:

Rank at Retirement: 0-6

Age at Retirement: 47

Years Spent in Retirement: 30

Annual Retirement Income (Real Dollars): $(\$101,131)(.625) = \$63,207$

Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$63,207 (19.6004) = \$1,238,882$$

Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$235,705

TSP Value as a percentage of Annuity Value when $i = 3\%$:

$$= 235705 / 1238882 = 19.03\%$$

Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$63,207 (12.4090) = \$784,336$$

Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$392,963

TSP Value as a percentage of Annuity Value when $i = 7\%$:

$$= 392963 / 784336 = 50.10\%$$

26 Year Retirement:

Table 11. 26 Year Retirement Calculations in Real Dollars

Year of Service	Rank	Annual Base Pay (\$)	5% of Base Pay (\$)	Matching Contribution (\$)	Total Annual Contribution (\$)	Total TSP Value at 3% Compounded Growth (\$)	Total TSP Value at 7% Compounded Growth (\$)
1	0-1	28,994	1450	1450	2900	2987	3103
2	0-1	30,175	1509	1509	3018	6185	6549
3	0-2	43,812	2191	2191	4382	10884	11697
4	0-2	45,292	2265	2265	4530	15877	17363
5	0-3	51,570	2579	2579	5158	21666	24097
6	0-3	54,036	2702	2702	5404	27882	31566
7	0-3	54,036	2702	2702	5404	34284	39558
8	0-3	56,747	2837	2837	5674	41157	48398
9	0-3	56,747	2837	2837	5674	48236	57857
10	0-3	58,504	2925	2925	5850	55709	68167
11	0-3	58,504	2925	2925	5850	63405	79198
12	0-4	69,070	3454	3454	6908	72422	92133
13	0-4	69,070	3454	3454	6908	81711	105974
14	0-4	71,345	3567	3567	7134	91510	121026
15	0-4	71,345	3567	3567	7134	101603	137131
16	0-4	72,652	3633	3633	7266	112135	154505
17	0-5	79,567	3978	3978	7956	123694	173833
18	0-5	81,817	4091	4091	8182	135832	194756
19	0-5	81,817	4091	4091	8182	148335	217144
20	0-5	84,046	4202	4202	8404	161441	241336
21	0-5	84,046	4202	4202	8404	174940	267222
22	0-5	86,573	4329	4329	8658	189106	295191
23	0-5	86,573	4329	4329	8658	203697	325119
24	0-5	86,573	4329	4329	8658	218726	357141
25	0-6	101,131	5057	5057	10114	235705	392963
26	0-6	106,096	5305	5305	10610	253704	431823

Using data from Table 11 and the assumptions of this model presented in Chapter II, we can determine the following:

Rank at Retirement: 0-6

Age at Retirement: 48

Years Spent in Retirement: 29

Annual Retirement Income (Real Dollars): $(\$106,096)(.65) = \$68,962$

Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$68,962 (19.1885) = \$1,323,277$$

Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$253,704

TSP Value as a percentage of Annuity Value when $i = 3\%$:

$$= 253704 / 1323277 = 19.17\%$$

Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$68,962 (12.2777) = \$846,695$$

Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$431,823

TSP Value as a percentage of Annuity Value when $i = 7\%$:

$$= 431823 / 846695 = 51.00\%$$

27 Year Retirement:

Table 12. 27 Year Retirement Calculations in Real Dollars

Year of Service	Rank	Annual Base Pay (\$)	5% of Base Pay (\$)	Matching Contribution (\$)	Total Annual Contribution (\$)	Total TSP Value at 3% Compounded Growth (\$)	Total TSP Value at 7% Compounded Growth (\$)
1	0-1	28,994	1450	1450	2900	2987	3103
2	0-1	30,175	1509	1509	3018	6185	6549
3	0-2	43,812	2191	2191	4382	10884	11697
4	0-2	45,292	2265	2265	4530	15877	17363
5	0-3	51,570	2579	2579	5158	21666	24097
6	0-3	54,036	2702	2702	5404	27882	31566
7	0-3	54,036	2702	2702	5404	34284	39558
8	0-3	56,747	2837	2837	5674	41157	48398
9	0-3	56,747	2837	2837	5674	48236	57857
10	0-3	58,504	2925	2925	5850	55709	68167
11	0-3	58,504	2925	2925	5850	63405	79198
12	0-4	69,070	3454	3454	6908	72422	92133
13	0-4	69,070	3454	3454	6908	81711	105974
14	0-4	71,345	3567	3567	7134	91510	121026
15	0-4	71,345	3567	3567	7134	101603	137131
16	0-4	72,652	3633	3633	7266	112135	154505
17	0-5	79,567	3978	3978	7956	123694	173833
18	0-5	81,817	4091	4091	8182	135832	194756
19	0-5	81,817	4091	4091	8182	148335	217144
20	0-5	84,046	4202	4202	8404	161441	241336
21	0-5	84,046	4202	4202	8404	174940	267222
22	0-5	86,573	4329	4329	8658	189106	295191
23	0-5	86,573	4329	4329	8658	203697	325119
24	0-5	86,573	4329	4329	8658	218726	357141
25	0-6	101,131	5057	5057	10114	235705	392963
26	0-6	106,096	5305	5305	10610	253704	431823
27	0-6	106,096	5305	5305	10610	272244	473404

Using data from Table 12 and the assumptions of this model presented in Chapter II, we can determine the following:

Rank at Retirement: 0-6

Age at Retirement: 49

Years Spent in Retirement: 28

Annual Retirement Income (Real Dollars): $(\$106,096)(.675) = \$71,615$

Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$71,615 (18.7641) = \$1,343,791$$

Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$272,244

TSP Value as a percentage of Annuity Value when $i = 3\%$:

$$= 272244 / 1343791 = 20.26\%$$

Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$71,615 (12.1371) = \$869,198$$

Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$473,404

TSP Value as a percentage of Annuity Value when $i = 7\%$:

$$= 473404 / 869198 = 54.46\%$$

28 Year Retirement:

Table 13. 28 Year Retirement Calculations in Real Dollars

Year of Service	Rank	Annual Base Pay (\$)	5% of Base Pay (\$)	Matching Contribution (\$)	Total Annual Contribution (\$)	Total TSP Value at 3% Compounded Growth (\$)	Total TSP Value at 7% Compounded Growth (\$)
1	0-1	28,994	1450	1450	2900	2987	3103
2	0-1	30,175	1509	1509	3018	6185	6549
3	0-2	43,812	2191	2191	4382	10884	11697
4	0-2	45,292	2265	2265	4530	15877	17363
5	0-3	51,570	2579	2579	5158	21666	24097
6	0-3	54,036	2702	2702	5404	27882	31566
7	0-3	54,036	2702	2702	5404	34284	39558
8	0-3	56,747	2837	2837	5674	41157	48398
9	0-3	56,747	2837	2837	5674	48236	57857
10	0-3	58,504	2925	2925	5850	55709	68167
11	0-3	58,504	2925	2925	5850	63405	79198
12	0-4	69,070	3454	3454	6908	72422	92133
13	0-4	69,070	3454	3454	6908	81711	105974
14	0-4	71,345	3567	3567	7134	91510	121026
15	0-4	71,345	3567	3567	7134	101603	137131
16	0-4	72,652	3633	3633	7266	112135	154505
17	0-5	79,567	3978	3978	7956	123694	173833
18	0-5	81,817	4091	4091	8182	135832	194756
19	0-5	81,817	4091	4091	8182	148335	217144
20	0-5	84,046	4202	4202	8404	161441	241336
21	0-5	84,046	4202	4202	8404	174940	267222
22	0-5	86,573	4329	4329	8658	189106	295191
23	0-5	86,573	4329	4329	8658	203697	325119
24	0-5	86,573	4329	4329	8658	218726	357141
25	0-6	101,131	5057	5057	10114	235705	392963
26	0-6	106,096	5305	5305	10610	253704	431823
27	0-6	106,096	5305	5305	10610	272244	473404
28	0-6	106,096	5305	5305	10610	291339	517894

Using data from Table 13 and the assumptions of this model presented in Chapter II, we can determine the following:

Rank at Retirement: 0-6

Age at Retirement: 50

Years Spent in Retirement: 27

Annual Retirement Income (Real Dollars): $(\$106,096)(.70) = \$74,267$

Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$74,267 (18.3270) = \$1,361,091$$

Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$291,339

TSP Value as a percentage of Annuity Value when $i = 3\%$:

$$= 291339 / 1361091 = 21.40\%$$

Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$74,267 (11.9867) = \$890,216$$

Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$517,894

TSP Value as a percentage of Annuity Value when $i = 7\%$:

$$= 517894 / 890216 = 58.18\%$$

29 Year Retirement:

Table 14. 29 Year Retirement Calculations in Real Dollars

Year of Service	Rank	Annual Base Pay (\$)	5% of Base Pay (\$)	Matching Contribution (\$)	Total Annual Contribution (\$)	Total TSP Value at 3% Compounded Growth (\$)	Total TSP Value at 7% Compounded Growth (\$)
1	0-1	28,994	1450	1450	2900	2987	3103
2	0-1	30,175	1509	1509	3018	6185	6549
3	0-2	43,812	2191	2191	4382	10884	11697
4	0-2	45,292	2265	2265	4530	15877	17363
5	0-3	51,570	2579	2579	5158	21666	24097
6	0-3	54,036	2702	2702	5404	27882	31566
7	0-3	54,036	2702	2702	5404	34284	39558
8	0-3	56,747	2837	2837	5674	41157	48398
9	0-3	56,747	2837	2837	5674	48236	57857
10	0-3	58,504	2925	2925	5850	55709	68167
11	0-3	58,504	2925	2925	5850	63405	79198
12	0-4	69,070	3454	3454	6908	72422	92133
13	0-4	69,070	3454	3454	6908	81711	105974
14	0-4	71,345	3567	3567	7134	91510	121026
15	0-4	71,345	3567	3567	7134	101603	137131
16	0-4	72,652	3633	3633	7266	112135	154505
17	0-5	79,567	3978	3978	7956	123694	173833
18	0-5	81,817	4091	4091	8182	135832	194756
19	0-5	81,817	4091	4091	8182	148335	217144
20	0-5	84,046	4202	4202	8404	161441	241336
21	0-5	84,046	4202	4202	8404	174940	267222
22	0-5	86,573	4329	4329	8658	189106	295191
23	0-5	86,573	4329	4329	8658	203697	325119
24	0-5	86,573	4329	4329	8658	218726	357141
25	0-6	101,131	5057	5057	10114	235705	392963
26	0-6	106,096	5305	5305	10610	253704	431823
27	0-6	106,096	5305	5305	10610	272244	473404
28	0-6	106,096	5305	5305	10610	291339	517894
29	0-6	106,096	5305	5305	10610	311008	565500

Using data from Table 14 and the assumptions of this model presented in Chapter II, we can determine the following:

Rank at Retirement: 0-6

Age at Retirement: 51

Years Spent in Retirement: 26

Annual Retirement Income (Real Dollars): $(\$106,096)(.725) = \$76,920$

Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$76,920 (17.8768) = \$1,375,083$$

Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$311,008

TSP Value as a percentage of Annuity Value when $i = 3\%$:

$$= 311008 / 1375083 = 22.62\%$$

Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$76,920 (11.6536) = \$896,395$$

Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$565,500

TSP Value as a percentage of Annuity Value when $i = 7\%$:

$$= 565500 / 896395 = 63.09\%$$

30 Year Retirement:

Table 15. 30 Year Retirement Calculations in Real Dollars

Year of Service	Rank	Annual Base Pay (\$)	5% of Base Pay (\$)	Matching Contribution (\$)	Total Annual Contribution (\$)	Total TSP Value at 3% Compounded Growth (\$)	Total TSP Value at 7% Compounded Growth (\$)
1	0-1	28,994	1450	1450	2900	2987	3103
2	0-1	30,175	1509	1509	3018	6185	6549
3	0-2	43,812	2191	2191	4382	10884	11697
4	0-2	45,292	2265	2265	4530	15877	17363
5	0-3	51,570	2579	2579	5158	21666	24097
6	0-3	54,036	2702	2702	5404	27882	31566
7	0-3	54,036	2702	2702	5404	34284	39558
8	0-3	56,747	2837	2837	5674	41157	48398
9	0-3	56,747	2837	2837	5674	48236	57857
10	0-3	58,504	2925	2925	5850	55709	68167
11	0-3	58,504	2925	2925	5850	63405	79198
12	0-4	69,070	3454	3454	6908	72422	92133
13	0-4	69,070	3454	3454	6908	81711	105974
14	0-4	71,345	3567	3567	7134	91510	121026
15	0-4	71,345	3567	3567	7134	101603	137131
16	0-4	72,652	3633	3633	7266	112135	154505
17	0-5	79,567	3978	3978	7956	123694	173833
18	0-5	81,817	4091	4091	8182	135832	194756
19	0-5	81,817	4091	4091	8182	148335	217144
20	0-5	84,046	4202	4202	8404	161441	241336
21	0-5	84,046	4202	4202	8404	174940	267222
22	0-5	86,573	4329	4329	8658	189106	295191
23	0-5	86,573	4329	4329	8658	203697	325119
24	0-5	86,573	4329	4329	8658	218726	357141
25	0-6	101,131	5057	5057	10114	235705	392963
26	0-6	106,096	5305	5305	10610	253704	431823
27	0-6	106,096	5305	5305	10610	272244	473404
28	0-6	106,096	5305	5305	10610	291339	517894
29	0-6	106,096	5305	5305	10610	311008	565500
30	0-6	106,096	5305	5305	10610	331266	616437

Using data from Table 15 and the assumptions of this model presented in Chapter II, we can determine the following:

Rank at Retirement: 0-6

Age at Retirement: 52

Years Spent in Retirement: 25

Annual Retirement Income (Real Dollars): $(\$106,096)(.75) = \$79,572$

Value of Annuity at Time of Retirement Discounted at 3% (Real Dollars):

$$= \$79,572 (17.4131) = \$1,385,595$$

Value of TSP at Time of Retirement Compounded at 3% (Real Dollars): \$331,266

TSP Value as a percentage of Annuity Value when $i = 3\%$:

$$= 331266 / 1385595 = 23.91\%$$

Value of Annuity at Time of Retirement Discounted at 7% (Real Dollars):

$$= \$79,572 (11.6536) = \$927,300$$

Value of TSP at Time of Retirement Compounded at 7% (Real Dollars): \$616,437

TSP Value as a percentage of Annuity Value when $i = 7\%$:

$$= 616437 / 927300 = 66.48\%$$

APPENDIX C – RESPONSES TO OPEN ENDED SURVEY QUESTION #14

1	Having TSP throughout a person's career (only started when I was well into it) and also having matching and a reduction in the retirement pension at the end would reduce the number of officers and enlisted just hanging around for the 20 year mark. No one wants to leave with nothing if there are many years invested. I think it would be great idea to have matching funds for TSP. It gives people more control of their future and retirement situation.
2	Only matching 5% of base pay is a nearly trivial amount of money. It is not really associated with pension reductions, but perhaps lower pay rates.
3	A matching retirement plan would be comparable to the civilian job marketplace and would be an added attraction for future sailors
4	The TSP should be more like a 401K, I don' like any of the choices I have for investing under TSP! I think the investing should be one or more of the bigger investment firms like Fidelity, Charles Schwab, etc. to get choices for my investing. That and the non-matching are the reasons I do my own investing (both IRA and regular Brokerage). I can do better and have that your current offerings!
5	With the TSP to supplement our retirement, I think it would be helpful if we could withdraw funds (tax penalty free) at 55 instead of 59 ½.
6	After 20 + years serving in the military, I think the right thing to do for retirees is match TSP contributions (like our civilian counterparts). Most importantly, this is without fear of losing any current pension plan that is more than deserved. A solid military retirement plan is what keeps our services strong. This is the best way for a Nation to say Thank You when it comes time to leave.

7	Overall, I think the services should do contributions matching but not at the cost of pension benefits; however, if they did contributions matching but penalized us by reducing our pensions by a percentage, I'd seriously have to consider it. My thoughts: use the time power of money to get more money now (through their matching program) and put it into a good investment.... Perhaps they could structure the program to 'for every year of contributions matching, you agree to serve another year of service.' This would be similar to other bonuses they offer.
8	I'd have to have the specifics concerning how much was reduced from my retirement; how long before matching funds became vested; everything about the program. Just like Redux, its not a simple yes or no question to answer with only knowing the broadest overarching information.
9	If there were no pension offered equal to the one being offered today and in the past, I would not join the military.
10	TSP matching would be an excellent opportunity to add one more tool to the retention package.
11	Currently, I do not recommend the Air Force as a career option to friends when asked. This is because it is 20 years or nothing for retirement. So, unless you are will to do the 20 years you might as well not join. It would be better to adapt a defined contribution/benefit mix where you can leave with your TSP and/or have the option to stay 20 years for the defined benefit portion.
12	5% of my base pay is about \$2,500 per year. I would need to figure out the present value of that payment stream and compare it to the present value of the retirement stream to make the best choice for me. The best choice for the Navy would be the cheaper of the two.
13	IRT #11, I might accept a reduction if the match was to a Roth account.

14	Contributing to TSP now, even with matching funds, reduces my buying power in current year dollars. To reduce my retirement in exchange for matching funds, in essence reduces my buying power now and later. To make this beneficial, the gain later would have to be substantial enough that the Net Present Value offsets my loss of income (the amount I contribute to TSP) at the present. What TSP does offer is an incentive for those who may not make it to 20 yrs to have some retirement savings upon exiting military service.
15	I prefer the stability of the pension. Stability is the greatest positive concerning financial compensation for military service.
16	If there was a reduction in the base pay percentage upon retirement, the 5% matching would only be useful to the individuals leaving the military prior to retirement. Matching would be nice, but not at the expense of the retirement pay.
17	Regardless of whether TSP is matched or not, in no way, shape or form should the current military retirement plan of 50% of base pay at 20 years be reduced. Nor should the 2.5% per year beyond 20 years of devoted service be reduced. After all, this is the major benefit owed for the many sacrifices that we all make.
18	Anything to reduce my tax load now should be highly beneficial. Having the option to get something before 20 years service is a great idea. I would want to read some detailed analysis of the different systems (401K vs. High-3) over short/long term before making any decisions. The REDUX bonus option seemed like a good option when it was first introduced but turned out to be a bad financial move for anyone retiring before 30 years service.
19	Matching contributions for military is long overdue! There is justification to only grant civilians this privilege. Military personnel deserve the added benefit for their service to our country.
20	I don't feel that the math works out for the matching contributions if you plan to retire at 20+ years.

21	I think offering TSP matching instead of a pension to new members of the services may be a good idea, but for people already in (especially those who do not contribute to TSP currently) they may see losing their pension as a loss of benefit.
22	I didn't understand the 'vested' question. I already contribute the maximum amount to my TSP, so the question of 'if the gov matched, would I increase or decrease?' is tough. I think that if they started matching, they might reduce our overall contribution limit.
23	We don't need matching contributions because we have a better pension than anyone in the private sector.
24	Where did questions 12 and 13 go? [note: This comment pertains to survey layout]
25	I would have to see the math on any of these decisions. If this theoretical TSP with matching contributions is shown to be worth more than the cumulative total of the pension payments, then I would change over. It all comes down to this question, 'Which system will give me more money when I retire?'. It would be nice to see this all graphed out, much the same as the typical charts titled, 'If you invest \$100/month..' that are shown at every financial planners office.
26	I already contribute ~8% to TSP plus all special pays. Whether or not it would be a good deal depends on how much offset there would be on the pension. Furthermore, 401(K) and 403(b) plans do not allow immediate withdrawal (you have to wait until age 55 (I believe). Currently I will be able to take my pension at age 44 ... 11 years of reduced pension is a big price to pay for some matching funds... probably not a good deal.
27	This should not be a one without the other. We are all given decisions and if you are willing to give your life to a military career you should not be asked to forfeit any of the retirement pension already offered. If you choose to participate in the TSP then this should be an additional benefit of your choice regardless of the government matching or not.
28	I'd have to do the math

29	Unanswerable
30	I don't think it's fair that civil service currently gets retirement pay and matching TSP when military retirees don't.
31	Additionally, I suggest that the SM have a choice at retirement (or at the 20 year mark) of either taking a reduced pension along with the matched TSP or forfeiting all or at least the matched portion of the TSP and taking the full conventional retirement. This would allow the SM flexibility and would in the end save the government money, as most SMs would likely choose conventional only during bad cyclical periods of stock market performance close to retirement.
32	What about a more streamlined approach for the non-savvy investor. Such as a active duty IRA (or ROTH IRA) - even the new ROTK 401K has good potential for a retirement tool. TSP requires too much 'basic knowledge' for our junior sailors to actively participate in. When it is hard to get them to contribute to the GI Bill, at their salary, it's even harder to get them to save for retirement, especially when there is so much of a basis to know in advance -i.e. the types of funds which are available. A more suitable 'fire and forget' (pay in and know it is there, making money, and being matched) would be a much more promising asset to the fleet.
33	How is it possible that federal employees receive matching contributions but active duty military don't. Not to say that these individuals don't work hard but for the most part they have 9-5 jobs and don't work the hours or deal with the hardships of active duty military. So why do they get better benefits and no reduction in there retirements?
34	This is an interesting idea. However, I would need to see the actual dollar for dollar cost/benefit analysis to see if this would be the best plan for me given my short time of enrollment in TSP. (I just began contributing this year.)
35	It all depends on the bottom line. Usually at most companies with a matching 401K, there is a 10% matching, instead of a pension. So it all depends on the numbers.

36	For [question] 13. I would need to do a more thorough analysis than I can do in a matter of a few minutes. Another question that would need to be answered is how much would the pension be reduced? Other thoughts include the civilian government employee pension plans. The civilian employees already have some contribution matching. How did their pension plan change when this change was initiated? What are the differences between military and civilian retirement plans?
37	\$\$ in the bank now is better than a retirement policy that can be legislated away in the next 10 years...
38	If the Pentagon reduced or eliminated the 20-year defined benefit pension, I would have a hard time recommending military service as a career to potential recruits.
39	I truly believe that match who only incentives others to invest. It would be a good kickback to the Government depending on what company they in turn rely on to help with the military thrift savings plan. It could encourage more people to invest in this plan and forgo an 401K
40	Your data/survey will be skewed as you pigeon-holed the questions.... MANY people are even MORE interested in the potential 'exchange' for being able to retire at less than 20 years of service. Too bad your study didn't include these ideas....
41	I would have to weight the matching percentage against the reduction amount before considering that option.
42	The military retirement system is one of the major benefits of military. Once you retire you get most of your income. This seems to be reasonable pay for all the days and years spent at sea and in harms way. The military deserves better retirement benefits than civilians.
43	I'm approaching 22 years in the Army, and already invest ten percent of my take home pay. If the government offered matching funds for the TSP, all the better.
44	I have always found that my young enlisted guys did not understand TSP. The Navy needs to conduct good briefing at boot camp to teach these young people to start contributing

	early, and how that benefits them. Matching contributions would benefit everyone, the service members and the military (since I think a lot of personnel would stay until retirement)
45	TSP distributions should be in addition to that which will be received by pension. Gov't employees are vested after 1 year and receive an auto 1% with agency matching. Military TSP should mirror the program provided for our civilian counterparts and not be considered a substitution for the full amount of the retirement we have earned.
46	I'd have to analyze the effect of a reduced pension vs. the 5% match would have on my retirement benefit with only 7 years to go before retirement. If this match were offered earlier in my career, a reduced pension may be feasible. Another factor in retirement benefits is health insurance. I would be more likely to accept a reduced monetary income (with the TSP match) but would still want to retain the health insurance benefits now in place.
47	Financial education for our service members is something we do very poorly in this country. It is a crime that civilians have matching options with 401k plans on the outside but military members are not offered similar monetary retirement benefits because they made serving their country their profession.
48	I think this plan does not accurately assess the real role that retirement benefits play in career planning . I think we saw that with Redux. The change was made without consulting the employees and it slowly eroded retention to the point that 50% was reinstated. If we make retirement payable at 60 then I think that compensation, especially at my pay grade will have to jump to a point that will make a voluntary military prohibitively expensive. I think we as officers often sell ourselves short and are just thankful to have jobs sometimes. Friends from home in the civilian world with equal responsibility and masters degrees make \$200-500K after working with a firm for 20 years and making promotion wickets. I love my work in the Navy, but my retired pay isn't some lottery that I've won. It's deferred compensation that we have all earned by taking responsibility, working very long hours and being away from home for time spans that are unheard of in most of the private sector. Folks

	I know in consulting that
49	Constant relocation, potential combat operations, and significant time deployed makes this job significantly different than a corporate career. Eroding retirement benefits is a poor choice for long term retention.
50	If the goal here is to limit DoD's expenses on pensions, my suggestion is to change the pension for new recruits to a 10% matching contribution TSP and drop the pension altogether for them. I would consider a reduction in pension for an increase in TSP matching contributions but it would have to be a lot.
51	I already max out TSP, so providing a TSP dollar match would not affect my contributions to my TSP account, although I would accept a lower percent of base pay in retirement for this contribution.
52	Whether I accepted a reduced pension is directly related to the amount of reductions. The math will show that if the gov matched 5% over 20 yrs and that officer hit all their promotion wickets and made O5, what would be value of their retirement package. I would not expect this to cover medical and dental benefits. In addition, over the crs of 20 yrs, a fixed % of the income to match severely hinders that persons ability to build their portfolio. for example, an enlisted man's income is only 1300 per month matched in those crucial years where their money has the most time to grow. The military is structured with small beginning pay and fast many pay raises over the crs of a career. as a result, it is hard to take advantage of periodic investment which requires time to grow to significant values. The guaranteed 50% of the high 3 is a very generous pension plan especially when medical and dental benefits are included. to compare to this, a very generous matching tsp plan would have to be offered
53	I think matching contributions would be great, however, the risk associated with investing in the stock market makes it a proposition that seems too risky at times, especially considering the risks taken by many military officers during their career. Additionally, the fact that

	bonuses are paid to certain career fields and not others makes the TSP playing field un-level.
54	To purchase an annuity with a monthly pay-out equal to my expected 20 year retirement would cost far more than I would make with a match on the first 5 percent of my TSP contributions over a twenty year career. Also I assume the majority of the financial risk with a 401K. We assume enough risks in the military, this is not one I would be willing to accept. If this was the retirement plan offered when I entered the military I would have gotten out 10 years ago and worked for a civilian company with equivalent benefits and a lot higher QOL for myself and my family. A lot of the reason I'm still here is the 20 year retirement carrot on the end of the stick.
55	There's no way, especially risk-free, for me to contribute to a 401(k) style investment with matching contributions, and still earn the equivalent to a 20 year pension. Serving for twenty years in order to receive the 50% high-three retirement is major consideration for making the Navy a career. If I retire after twenty years and collect on my retirement for 30 yrs it's the equivalent of having a \$1.2 million annuity to draw from. There is no 401(k) style investment that can guarantee the same pay-out, is inflation adjusted, or security.
56	Matching funds are already provided for civilian government employees with a pension plan.
57	I'd have to run the numbers to decide if it was beneficial to accept reduced retirement for matching. Also, members with significant time already in service would need a grandfather clause of some sort for vesting.

58	<p>I think in order to get highly qualified officers, the retirement system should be changed to one in which officers would become vested after 5 years. While I am happy that I can retire at 20 years because that suits me personally, it would be much better for the military to encourage officers to continue to serve beyond that time. Corporate knowledge is our most valuable resource. A vesting program that increases incrementally from 5 (10%) years through 40 (80%) years with no 'expected' retirement year (i.e. currently year 20) would make much more sense. Plus it would leave the service members with much more flexibility to make the best career decisions for the wellbeing of themselves and their families.</p> <p>Additionally, you shouldn't 'force' anyone out for non-promotion. I've seen a system like this at work in the UK military and you have a LOT of old O-4s who never promoted. As a US officer my initial feeling was that if they weren't good enough to promote they weren't worth having around.</p>

LIST OF REFERENCES

Batchelder, Craig D, & Lombard, Edward A., "MBA Professional Report: The Uniformed Services' Thrift Savings Plan and Military Retirement Compensation Package Options," Naval Postgraduate School, December 2005.

Board of Trustees, Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds, "The 2005 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds," www.ssa.gov, 5 April 2005

Defense Advisory Committee on Military Compensation, "Preliminary Findings/Recommendations," <http://www.defenselink.mil/prhome/dacmc.html>, February 2006

Defense Finance and Accounting Service, "Basic Pay – Effective January 1, 2006," <http://www.dod.mil/dfas/militarypay/newinformation/WebPayTableVersion2006updated.pdf>, April 2006

DoD Office of the Under Secretary of Defense for Personnel and Readiness, "Report of the Ninth Quadrennial Review of Military Compensation," <http://www.defenselink.mil/prhome/index.html>, April 2006

Federal Retirement Thrift Investment Board, "G,F,C,S, and I Fund Rates of Return 1988-2005," <http://www.tsp.gov/rates/monthly-history.html>, April 2006

Federal Retirement Thrift Investment Board, "G Fund – Government Securities Investment Fund," <http://www.tsp.gov/rates/fundsheets/gfund.pdf>, April 2006

Federal Retirement Thrift Investment Board, "F Fund – Fixed Income Index Investment Fund," <http://www.tsp.gov/rates/fundsheets/ffund.pdf>, April 2006

Federal Retirement Thrift Investment Board, "C Fund – Common Stock Index Investment Fund," <http://www.tsp.gov/rates/fundsheets/cfund.pdf>, April 2006

Federal Retirement Thrift Investment Board, "S Fund – Small Capitalization Stock Index Investment Fund," <http://www.tsp.gov/rates/fundsheets/sfund.pdf>, April 2006

Federal Retirement Thrift Investment Board, "I Fund – International Stock Index Investment Fund," <http://www.tsp.gov/rates/fundsheets/ifund.pdf>, April 2006

Keown, Arthur J., et. al., "Financial Management: Principles and Applications," Pearson Prentice Hall, 2005

Lubold, Gordon, "Sweeping Changes: DoD Pay Plans Could Have Positive – and Negative – Effects on your Wallet," Navy Times, 13 March 2006.

PRNewswire, "Verizon Communications Announces Restructuring of Management Retirement Benefits," <http://www.prnewswire.com/comp/094251.html>, 05 December 2005

Zouras, Peter M., "Valuation of the Military Retirement System" DoD Office of the Actuary, 30 September 2004.

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